# 1NC

### 1

#### States ought to:

#### --Announce that appropriation of outer space by private actors violates the Outer Space Treaty and that this is a settled matter of customary international law

#### --Announce that this action is taken pursuant to *opinio juris* (the belief that the action is taken pursuant to a legal obligation) and that non-compliant actors are in violation of international law

#### --Fully comply, not appropriating outer space in a manner inconsistent with these proclamations

#### Solves the Aff.

[Fabio](https://kluwerlawonline.com/journalarticle/Air+and+Space+Law/33.3/AILA2008021) **Tronchetti 8**. Dr. Fabio Tronchetti works as a Co-Director of the Institute of Space Law and Strategy and as a Zhuoyue Associate Professor at Beihang University, “The Non–Appropriation Principle as a Structural Norm of International Law: A New Way of Interpreting Article II of the Outer Space Treaty,” Air and Space Law, Volume 33, No 3, 2008, <https://kluwerlawonline.com/journalarticle/Air+and+Space+Law/33.3/AILA2008021>, RJP, **DebateDrills**.

The non–appropriation principle represents the fundamental rule of the space law system. Since the beginning of the space era, it has allowed for the safe and orderly development of space activities. Nowadays, however, the principle is under attack. Some proposals, arguing the need for abolishing it in order to promote commercial use of outer space are undermining its relevance and threatening its role as a guiding principle for present and future space activities. This paper aims at safeguarding the non–appropriative nature of outer space by suggesting a new interpretation of the non–appropriation principle that is based on the view that this principle should be regarded as a customary rule of international law of a special character, namely ‘a structural norm’ of international law.

#### That competes ---

#### 1] Widespread support for OST overhaul means a new treaty is likely---top military leaders are pushing it. Their plan links – it adds on a huge amendment to the OST that will cause full overhaul

Theresa **Hitchens 21**. Theresa Hitchens is the Space and Air Force reporter at Breaking Defense. The former Defense News editor was a senior research associate at the University of Maryland’s Center for International and Security Studies at Maryland (CISSM). Before that, she spent six years in Geneva, Switzerland as director of the United Nations Institute for Disarmament Research (UNIDIR). “US Should Push New Space Treaty: Atlantic Council,” Breaking Defense, April 12, 2021, <https://breakingdefense.com/2021/04/us-should-push-new-space-treaty-atlantic-council/>, RJP, **DebateDrills**

WASHINGTON: The US should push hard to overhaul the entire international legal framework for outer space — including replacing the foundational [1967 Outer Space Treaty (OST),](https://breakingdefense.com/tag/outer-space-treaty/) a new report from the Atlantic Council says.

As it moves to do so, the US also should more aggressively court allies with an eye to establishing a “collective security alliance for space” among likeminded countries to “deter aggression” and defend “key resources and access.”

“The 1967 Treaty is dated. It was written, literally, in a different era,” said former Air Force Secretary Deborah Lee James in an Atlantic Council briefing today. “At present it is too broad, and in some cases it’s probably overly specific.”

The year-long study, [“The Future of Security In Space: A Thirty-Years US Strategy”](https://www.atlanticcouncil.org/wp-content/uploads/2021/04/TheFutureofSecurityinSpace.pdf)was co-chaired by James and retired Marine Corps Gen. Hoss Cartwright, former vice chair of the Joint Chiefs of Staff. In essence, it argues that the US needs to lead international efforts to craft a new rules-based regime to govern all space activities — from exploration to commercial ventures to military interactions. As the two argued in a recent [op-ed in Breaking D,](https://breakingdefense.com/2021/03/the-space-rush-new-us-strategy-must-bring-order-regulation/) “Great-power competition among the United States, China, and Russia has launched into outer space without rules governing the game.”

“The international law of space, centered on the 1967 Outer Space Treaty, is outdated and insufficient for a future of space in which economic activity is primary. The international community needs a new foundational space treaty, and the United States should precipitate its negotiation,” the study argues.

James elaborated that the idea would be to craft a more expansive treaty that covers emerging issues like debris mitigation and removal and [commercial extraction of resources](https://breakingdefense.com/tag/space-resource-extraction/) from the Moon and/or asteroids. That said, she stressed that the US should not abandon the OST — which has been signed by 193 nations — unless and until something new is there to replace it.

#### 2] Space law is typically treaty-based---Russian and Chinese proposals prove.

Stephanie **Nebehay 8**. Reporter, Reuters, “China, Russia to Offer Treaty to Ban Arms in Space,” Reuters, January 26, 2008, <https://www.reuters.com/article/us-arms-space/china-russia-to-offer-treaty-to-ban-arms-in-space-idUSL2578979020080125>, RJP, **DebateDrills**

GENEVA (Reuters) - China and Russia will submit a joint proposal next month for an international treaty to ban the deployment of weapons in outer space, a senior Russian arms negotiator said on Friday.

Valery Loshchinin, Russia’s ambassador to the United Nations-sponsored Conference on Disarmament, said the draft treaty would be presented to the 65-member forum on February 12.

Russian Foreign Minister Sergei Lavrov is due to address the Geneva forum, which constitutes the world’s main disarmament negotiating body, on that day. Loshchinin gave no details on the proposal which has been circulated to some senior diplomats.

Tensions between Russia and the United States have deepened in recent years over U.S. plans to revive its stalled “Star Wars” program from the 1980s with a new generation of missile defense shields.

Nuclear and other weapons of mass destruction are banned from space under a 1967 international treaty. But Washington’s plans have stirred concerns about non-nuclear arms in space.

#### 3] Treaties are the foundation of space law.

Sophie **Goguichvili et. al 21**. Program Associate, the Wilson Center, “The Global Legal Landscape of Space: Who Writes the Rules on the Final Frontier?” The Wilson Center, October 1, 2021, <https://www.wilsoncenter.org/article/global-legal-landscape-space-who-writes-rules-final-frontier>, RJP, **DebateDrills**

As previously mentioned, a series of treaties adopted by the U.N. General Assembly (UNGA) form the foundation of the global space governance system. The first and most significant of these treaties is the “Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies,” more commonly known as the **Outer Space Treaty**or**OST** for short (1967). The Outer Space Treaty is considered the most comprehensive space treaty and provides the basic framework for international space law, namely: the exploration and use of outer space for peaceful purposes by all States for the benefit of mankind (Art. I); the outlaw of national appropriation or claims of sovereignty of outer space or celestial objects (Art. II); a ban on the placement of weapons of mass destruction in orbit or on celestial bodies (Art. IV); that astronauts should be regarded as the envoys of mankind (Art. V); and that States are required to supervise the activities of their national entities (Art. VI).

#### We solve better, since CIL is far superior to treaties for space AND causes follow-on.

Koplow, 9 – Professor of Law, Georgetown University Law Center.

David A. Koplow, “ASAT-isfaction: Customary International Law and the Regulation of Anti-Satellite Weapons,” Michigan Journal of International Law. Volume 30, Summer 2009. <http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1452&context=facpub>

Finally, the Article concludes with some policy recommendations, suggesting mechanisms for the world community to press forward with autonomous efforts to promote stability and security in outer space, even in the face of recalcitrance from the leading space powers. I would certainly support the negotiation and implementation of a comprehensive new treaty to prevent an arms race in outer space, and a carefully drafted, widely accepted accord could accomplish much, well beyond what customary law alone could create. But the treaty process, too, has costs and disadvantages, and the world need not pursue just one of these alternatives in isolation.

If the absence of global consensus currently inhibits agreements that countries could already sign, perhaps the world community can nevertheless get some "satisfaction" via the operation of CIL, constructing a similar (although not completely equivalent) edifice of international regulation of ASATs based simply on what countries do.

### 2

#### The plan requires clarifying international space law---causes strategic bargaining to extract concessions

Alexander William Salter 16, Assistant Professor of Economics, Rawls College of Business, Texas Tech University, "SPACE DEBRIS: A LAW AND ECONOMICS ANALYSIS OF THE ORBITAL COMMONS", 19 STAN. TECH. L. REV. 221 (2016), https://law.stanford.edu/wp-content/uploads/2017/11/19-2-2-salter-final\_0.pdf

V. MITIGATION VS. REMOVAL

Relying on international law to create an environment conducive to space debris removal initially seems promising. The Virginia school of political economy has convincingly shown the importance of political-legal institutions in creating the incentives that determine whether those who act within those institutions behave cooperatively or predatorily.47 In the context of space debris, the role of nation-states, or their space agencies, would be to create an international legal framework that clearly specifies the rules that will govern space debris removal and the interactions in space more generally. The certainty afforded by clear and nondiscriminatory48 rules would enable the parties of the space debris “social contract” to use efficient strategies for coping with space debris. However, this ideal result is, in practice, far from certain. To borrow a concept from Buchanan and Tullock’s framework,49 the costs of amending the rules in the case of international space law are exceptionally high. Although a social contract is beneficial in that it prevents stronger nation-states from imposing their will on weaker nation-states, it also creates incentives for the main spacefaring nations to block reforms that are overall welfare-enhancing but that do not sufficiently or directly benefit the stronger nations.

The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (more commonly known as the Outer Space Treaty) is the foundation for current international space law.50 All major spacefaring nations are signatories. Article VIII of this treaty is the largest legal barrier to space debris removal efforts. This article stipulates that parties to the treaty retain jurisdiction over objects they launch into space, whether in orbit or on a celestial body such as the Moon. This article means that American organizations, whether private firms or the government, cannot remove pieces of Chinese or Russian debris without the permission of their respective governments. Perhaps contrary to intuition, consent will probably not be easy to secure.

A major difficulty lies in the realization that much debris is valuable scrap material that is already in orbit. A significant fraction of the costs associated with putting spacecraft in orbit comes from escaping Earth’s gravity well. The presence of valuable material already in space can justifiably be claimed as a valuable resource for repairs to current spacecraft and eventual manufacturing in space. As an example, approximately 1,000 tons of aluminum orbit as debris from the upper stages of launch vehicles alone. Launching those materials into orbit could cost between $5 billion and $10 billion and would take several years.51 Another difficulty lies in the fact that no definition of space debris is currently accepted internationally. This could prove problematic for removal efforts, if there is disagreement as to whether a given object is useless space junk, or a potentially useful space asset. Although this ambiguity may appear purely semantic, resolving it does pose some legal difficulties. Doing so would require consensus among the spacefaring nations. The negotiation process for obtaining consent would be costly.

Less obvious, but still important, is the 1972 Convention on International Liability for Damage Caused by Space Objects, normally referred to as the Liability Convention. The Liability Convention expanded on the issue of liability in Article VII of the Outer Space Treaty. Under the Liability Convention, any government “shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the Earth or to aircraft, and liable for damage due to its faults in space.”52 In other words, if a US party attempts to remove debris and accidentally damages another nation’s space objects, the US government would be liable for damages. More generally, because launching states would bear costs associated with accidents during debris removal, those states may be unwilling to participate in or permit such efforts. In theory, insurance can partly remediate the costs, but that remediation would still make debris removal engagement less appealing.

A global effort to remediate debris would, by necessity, involve the three major spacefaring nations: the United States, Russia, and China.53 However, any effort would also require—at a minimum—a significant clarification and—at most —a complete overhaul of existing space law.54 One cannot assume that parties to the necessary political bargains would limit parleying to space-related issues. Agreements between sovereign nation-states must be self-enforcing.55 To secure consent, various parties to the change in the international legal-institutional framework may bargain strategically and may hold out for unrelated concessions as a way of maximizing private surplus. The costs, especially the decision-making costs, of changing the legal framework to secure a global response to a global commons problem are potentially quite high.

#### Russia uses negotiations to push the PPWT---erodes US space dominance---unilat solves

Michael Listner 18, JD, Regent University School of Law, the founder and principal of the legal and policy think-tank/consultation firm Space Law and Policy Solutions, Sept 17 2018, "The art of lawfare and the real war in outer space", The Space Review, www.thespacereview.com/article/3571/1

A battle for primacy in outer space took place on August 14, 2018, among the Russian Federation, the United States, and, indirectly, the People’s Republic of China. This battle did not involve the exotic technology of science fiction, antisatellite weapons (ASATs), or the incapacitation of satellites; it was not part of a hot war and did not even occur in outer space. Rather, it took place in the halls of the Conference of Disarmament in Geneva, Switzerland, and concerned the interdiction of the hypothetical deployment of instrumentalities of a hot war in outer space. The carefully orchestrated arena for this battle by the proponents of banning so-called space weapons involved methodologies, institutions, and agents of international law but was undermined by a vigorous counterattack by the United States using the same forum and suite of instruments so skillfully levied against it.1 This battle, of course, is not a single instance but the latest skirmish of a much larger conflict involving real war in space.

There’s been significant attention—and overstatem­ent— about the effect of a proposed Space Force by the United States, including an arms race and dominance as articulated by the United States,2 yet little attention has been given to the contest that continues to be fought over outer space using the tools of international law and policy, both of which are instruments of “lawfare.” Maj. General Charles N. Dunlap, Jr. (retired)3 first defined lawfare in the paper “Law and Military Interventions: Preserving Humanitarian Values in 21st Conflicts,” as “a method of warfare where law is used as a means of realizing a military objective.”4 This definition can be expanded to the use of hard law, soft law, and non-governmental organizations and institutions within the international arena to achieve a national objective and geopolitical end that would otherwise require the use of hard power. As observed by General Dunlap, lawfare imputes the teachings of Sun Tzu in particular this teaching: “The supreme art of war is to subdue the enemy without fighting.”5

Lawfare is not a new concept and has been used in many domains, but the tools brought to bear have become more prolific, and the domain of outer space has been and continues to be a theater where it is applied. The earliest example of lawfare (even though the term was not yet coined) in outer space occurred pre-Sputnik with Soviet Union attempting to use customary law to make claims of sovereignty extending beyond the atmosphere to the space above its territory. This claim was preempted by the launch of Sputnik 1 and the act of the satellite flying over the territory of other nations.6 The Eisenhower Administration saw this as an opportunity to meet a national space policy goal and likewise used customary law as an implement of lawfare and successfully created the principle of free access to outer space, which it utilized for photoreconnaissance activities in lieu of overflights of another nation’s sovereign airspace.7 The Soviet Union unsuccessfully attempted to defeat this move using lawfare in the United Nations through a proposal that would have prohibited the use of outer space for the purpose of intelligence gathering.8

Since that setback, the art of lawfare in outer space has settled on the objective ascribed to another teaching of Sun Tzu:

“With regard to precipitous heights, if you proceed your adversary, occupy the raised and sunny spots, and there wait for him to come up. Remember, if the enemy has occupied precipitous heights before you, do not follow him, but retreat and try to entice him away.”9

The second part of this teaching exemplifies the role of lawfare in the present war in outer space: to employ the tools and institutions of international law as a means to legally corner an adversary and gain geopolitical advantage in soft power, with the aim of slowing and eroding the advantage that adversary has attained through preeminence in the domain of outer space, and replace it with their own. This objective is accomplished by two general means: legally-binding measures, most commonly in the form of treaties, and so-called non-binding measures couched as sustainability.

Lawfare in space continued in the intervening years between Sputnik-1 and the signature and ratification of the Outer Space Treaty and afterward. The weapon of choice: disarmament proposals for outer space. Provisions for banning so-called space weapons in the Outer Space Treaty were rejected by the Soviet Union in favor of separate arms control measures.10 These measures included proposals, some of which related to the proscription of ASATs, designed to not only gain an advantage in outer space but to gauge political intent and resolve.11

The lawfare offensive escalated after the proposed Strategic Defense Initiative with an effort curtail space-based missile defense technology through a ban on so-called space weapons and a proverbial arms race in outer space. The Prevention of an Arms Race in Outer Space (PAROS), introduced in 1985, continues to seek a legally binding measure to place any weapon in outer space, including those designed for self-defense. It spawned measures such as the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT), co-sponsored by Russia and China. This and other measures have met resistance as unverifiable and certainly are not likely to gain the advice and consent of the US Senate for ratification. The end game of the use of lawfare in the form of efforts like PAROS—the latest attempt at which was defeated in Geneva—is to propose legally binding measures that proponents would ignore to their advantage in any event. The sponsors and advocates of these hard-law measures recognize they will not come to fruition but, in the process of promoting them, will enhance their soft power and moral authority, which can be applied to entice their adversary down.

Non-binding resolutions and measures in the form of political agreements and guidelines are being used concurrently in the lawfare engagement in outer space, where proposals for legally binding measures alone fall short of the goal of creating hard law and challenging dominance in outer space. These resolutions and measures, which emphasize sustainability, are designed to perform an end run around the formalities of a treaty to entice agreement on issues that would otherwise be unacceptable in a hard-law agreement. These measures have the dual effect to create soft-power support on the one hand and hard law on the other. This tool of lawfare, which uses clichés of cooperation and sustainability, is a ploy that applies the ambiguous nature of customary international law to achieve what cannot be done through treaties: to “entice the adversary away” and create legal and political constraints to bind and degrade its use of outer space or prevent it from maintaining its superiority, all the while allowing others to play catchup and replace one form of dominance with another. While lawfare is by nature asymmetric, this indirect approach could be considered a subset an irregular tactic of lawfare, as opposed to the use of formal treaties in lawfare.

The crux is that, like space objects used in outer space, international law and its implements are dual-use in that they can be used for proactive ends or weaponized, with those using the appliances of lawfare to encourage cession of the high ground choosing the latter rather than the former. The decision to weaponize international law and its institutions to prosecute this war in space brings into question the efficacy of new rules or norms. Indeed, the idea of expanding the jurisprudence of outer space through custom, as being suggested by the United States, and more recently gap-filling rules being suggested by academia that could become custom, presents the real chance that, rather than the creation of the ploughshare of sustainability, new and more effective swords for lawfare will be forged.

To paraphrase Sun Tzu, “all war is deception.” In the case of outer space, the pretext in the current war in space is that an arms race and a hot war in outer space is inevitable, and can only be avoided by formal rules or international governance. Conversely, a hot war can be prevented in no small part by using lawfare to engage in the contemporary war in space using the tools of, and the abundant resources found in, the experience of attorneys and litigators in particular to supplement and support diplomats to extend the velvet glove when applicable, and bare knuckles when necessary. If the August 14 statement in Geneva is any indicator, the United States may have just done that and begun the shift from light-touch diplomacy to bringing its legal warriors to bear in full-contact lawfare to engage and win the current war in outer space and help deter a more serious hot war from occurring without sacrificing the superiority it possesses in outer space.

#### The PPWT prohibits space-based missile defense

Jack M. Beard 16, Associate Professor of Law at the University of Nebraska College of Law, Feb 15 2016, "Soft Law ’s Failure on the Horizon: The International Code of Conduct for Outer Space Activities", University of Pennsylvania Journal of International Law, Vol. 38, No. 2, 2016, <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1086&context=spacelaw>

B. Avoid Arms Control Traps in Space

Any successful effort to achieve legally binding restrictions on military activities or weapons in space must focus on specific, definable, and limited objectives or run afoul of issues that have historically ensured deadlock among suspicious and insecure adversaries.306 Some seemingly desirable goals, however, are likely to ensure failure.

The first such problematic goal involves attempting to use arms control agreements or other instruments to comprehensively ensure peace in space. Unfortunately, the integration of modern military systems on earth, sea, air and space guarantees that at some point states seeking to disrupt or deny the ability of an adversary (such as the United States) to project power will find space capabilities to be a particularly appealing target, especially in the early stages of a crisis or conflict.307 The presence of so many things of military value in space thus makes actions by an adversary to neutralize, disrupt or destroy these things likely during a major conflict on earth.308

The second problematic arms control goal in space that seems certain to ensure stalemate involves attempting to define and prohibit military technologies with a view to broadly prevent the weaponization of space. Clearly defining a space weapon for purposes of any legally binding arms control agreement is a daunting task, one which is made particularly challenging by the “essentially military nature of space technology.”309 As noted, space technologies are routinely viewed as dual-use in nature, meaning that they can be readily employed for both civilian and military uses. Determining the ultimate purpose of many space technologies may thus depend on discerning the intentions of states, a process perhaps better suited for psychological than legal evaluation. 310

Further complicating the classification of space military technologies is the inherent difficulty in distinguishing most space weapons on the basis of their offensive and defensive roles or even their specific missions.311 For example, this problem lies at the heart of debates over the status and future of ballistic missile defense (BMD) programs, since the technology underlying BMD systems and offensive ASAT weapons is often indistinguishable.312 Vague and broad soft law instruments do not resolve this problem, but create instead their own confusion and insecurity. Vague and broad provisions in legally binding agreements that do not or cannot distinguish between these missions are similarly problematic.

These issues, particularly difficulties in distinguishing ASAT and BMD systems, have figured prominently in complicating negotiations on space weapons over previous decades.313 Similarly, these concerns were a significant factor in initial U.S. opposition to the arms control measure proposed by China and Russia (the PPWT) since it prohibits states from placing any type of weapon in outer space (regardless of its military mission), thus effectively prohibiting the deployment of ballistic missile defense systems. 314 Furthermore, even if clear legal restrictions could be developed, verifying compliance with respect to technology in orbit around Earth would be very difficult (a point conceded even by China with respect to its own proposed PPWT).315

#### Causes rogue state missile threats---that escalates

Patrick M. Shanahan 19, Acting Secretary of Defense from January to June 2019, previously vice president and general manager of Boeing Missile Defense Systems, Jan 2019, "2019 MISSILE DEFENSE REVIEW", US Department of Defense, https://media.defense.gov/2019/Jan/17/2002080666/-1/-1/1/2019-MISSILE-DEFENSE-REVIEW.PDF

U.S. Homeland Missile Defense will Stay Ahead of Rogue States’ Missile Threats

Technology trends point to the possibility of increasing rogue state missile threats to the U.S. homeland. Vulnerability to rogue state missile threats would endanger the American people and infrastructure, undermine the U.S. diplomatic position of strength, and could lead potential adversaries to mistakenly perceive the United States as susceptible to coercive escalation threats intended to preclude U.S. resolve to resist aggression abroad. Such misperceptions risk undermining our deterrence posture and messaging, and could lead adversaries to dangerous miscalculations regarding our commitment and resolve.

It is therefore imperative that U.S. missile defense capabilities provide effective protection against rogue state missile threats to the homeland now and into the future. The United States is technically capable of doing so and has adopted an active missile defense force-sizing measure for protection of the homeland. DoD will develop, acquire, and maintain the U.S. homeland missile defense capabilities necessary to effectively protect against possible missile attacks on the homeland posed by the long-range missile arsenals of rogue states, defined today as North Korea and Iran, and to support the other missile defense roles identified in this MDR.

This force-sizing measure for active U.S. missile defense is fully consistent with the 2018 NPR, and in order to keep pace with the threat, DoD will utilize existing defense systems and an increasing mix of advanced technologies, such as kinetic or directed-energy boost-phase defenses, and other advanced systems. It is technically challenging but feasible over time, affordable, and a strategic imperative. It will require the examination and possible fielding of advanced technologies to provide greater efficiencies for U.S. active missile defense capabilities, including space-based sensors and boost-phase defense capabilities. Further, because the related requirements will evolve as the long-range threat posed by rogue states evolves, it does not allow a static U.S. homeland defense architecture. Rather, it calls for a missile defense architecture that can adapt to emerging and unanticipated threats, including by adding capacity and the capability to surge missile defense as necessary in times of crisis or conflict.

In coming years, rogue state missile threats to the U.S. homeland will likely expand in numbers and complexity. There are and will remain inherent uncertainties regarding the potential pace and scope of that expansion. Consequently, the United States will not accept any limitation or constraint on the development or deployment of missile defense capabilities needed to protect the homeland against rogue missile threats. Accepting limits now could constrain or preclude missile defense technologies and options necessary in the future to effectively protect the American people.

As U.S. active defenses for the homeland continue to improve to stay ahead of rogue states’ missile threats, they could also provide a measure of protection against accidental or unauthorized missile launches. This defensive capability could be significant in the event of destabilizing domestic developments in any potential adversary armed with strategic weapons, and as long-range missile capabilities proliferate in coming years.

U.S. missile defense capabilities will be sized to provide continuing effective protection of the U.S. homeland against rogue states’ offensive missile threats. The United States relies on nuclear deterrence to address the large and more sophisticated Russian and Chinese intercontinental ballistic missile capabilities, as well as to deter attacks from any source consistent with long-standing U.S. declaratory policy as re-affirmed in the 2018 NPR.

### 3

#### CP: The appropriation of outer space by private entities is unjust except for private entities registered within The Republic of India.

#### The Republic of India should limit the Indian Space Research Organization’s market share to 7.5%

#### Private appropriation for Indian private entities is key for investor confidence.

**Sen 20** [Nilanjan Sen, who is an experienced lawyer, specialising in International Law and Arbitration, 07-26-2020,Business Insider,https://www.businessinsider.in/science/space/news/the-fault-in-our-stars-indias-bid-at-privatizing-space/articleshow/77182064.cms, 12-7-2021 amrita]

With the creation of the Indian National Committee for Space Research (now ISRO) in 1962, India has been an active patron to mankind’s space efforts. From Aryabhata to Chandrayaan-2, India has launched 113 satellites, including the first privately built and funded satellite ExceedSat-1 which was launched from USA, as a part of Elon Musk’s Space X project Falcon-9. Up **until 2016, India’**s space activities **have been the exclusive domain of the State, however, the launch of the IRNSS-1H** in 2017 was the herald of a new era in India’s Space endeavours. The IRNSS-1H **marked the** beginning of **privatisation in this area** by being the first Indian satellite, to be designed in collaboration with the private parties. In the following year, the ExseedSat-1 was to become the first privately funded and built satellite launched in collaboration with the private Space X project. Interestingly, **up until now**, all **missions have been conducted for** purposes of research, reconnaissance as well as for augmenting communication systems since there wa**s a substantial State monopoly**. With the recent announcement ofthe creation of the Indian National Space Promotion and Authorization Centre or IN-SPACeby the Government of India as part of its atma nirbhar Bharat scheme, which aims at providing a “level playing field” and a supportive regulatory regime to allow Indian private enterprises to grow and carve their own niche in the so-called “fast-growing global space sector”**, India has** in fact **shown an inclination to capitalise** on the US strategy of opening up the avidly touted space “sector” to private participation. While the initiative **sounds exhilarating** and will definitely go a long way in defining India’s image as an emerging global technology powerhouse**, it is** extremely **difficult to fathom why private players, would** be willing to readily come forward and **invest billions,** by confining their activities for research purposes alone, **without any expectation of commercial gains** or simply, return on their investment. This is so because, matters concerning space and space exploration are subject of a special branch of customary international law, that are mainly centred around five treaties and eleven agreements. The most significant of these is the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies or the Outer Space Treaty (OST) which India ratified in 1967, and which specifically lays down under Article I that outer space and space exploration including that on the moon and other celestial bodies, are to be carried out solely for, and in the interest of all countries, and that they are the province of all mankind. **Article II restricts** claims of sovereignty and national **appropriation** by any means whatsoever, Article VI **places international responsibility on all activities carried on by** governmental or by **non-governmental entities**, as well as mandates authorization and continuing supervision by the appropriate State Party. While there is considerable debate surrounding the applicability of the OST especially Article VI to private parties, since the US Supreme Court ‘s ruling in Medellin v Texas (2008) which held that Article VI is not self-executing in nature, regard must be had to the fact that these are domestic Court rulings and the fact that Space law is part of Customary International law which is affirmed by decades of State practise, cannot be denied, and neither can the fact that it is settled principle of international law that a State cannot, under the excuse of changes in domestic law, including subsequent Court rulings, renege from treaty obligations once ratified. In effect, the OST places strict checks upon the objectives behind exploring this uncharted territory by State and Non-State actors, far less allowing the possibility of even claiming rights of any kind. Moreover, it is no secret that **private corporations operate predominantly with** the object of individual gains **and** unless driven by the zeal to serve mankind and share profits with all countries, **chances are** that the **investments** made by private parties **will have little** to nil **returns,** far less any substantive protection**.**

#### Investor confidence is necessary for strong Indian private space-tech—that spills over, boosts Indian military heg, and turns case.

**Prasad 16** [Narayan Prasad has a Master of Space & Telecommunications Law, May 2016, National Academy of Legal Studies and Research University of Law Hyderabad, https://www.researchgate.net/publication/305402089\_A\_POLICY\_REVIEW\_TOWARDS\_THE\_DEVELOPMENT\_OF\_A\_SPACE\_INDUSTRY\_ECOSYSTEM\_IN\_INDIA/link/578dbd2908ae5c86c9a65d05/download, 12-8-2021 amrita]

As India ramps up its space defence capabilities, **lack of a mature space industrial base will** potentially **hurt** its ambitions**.** **India** counts among the top nations in the world in terms of government space investment 4 , but **is far behind** when it comes to **creating successful private industry** that is globally reputed. India’s space budget has increased in size (Figure 2) and is one of the largest space budgets in the world; however, the lack of an active space industry at turnkey level might have an immense opportunity cost for India in manufacturing satellites and launch vehicles to service the global market.5 This in effect is also due to absence of a single Indian company among the top space companies in the world (which in itself is an alarming statistic) that needs to be addressed urgently through policy push under the several grand schemes announced by the current government, such as ‘Make in India’ and ‘Digital India’. Most of **the apprehensions** for private investment in space industry **come from** the **requirements** of high capital investment, **and** the long gestation periods of space projects to get substantial Return on Investment (RoI) for the investors. These trends have been put aside by a new breed of space companies calling themselves ‘NewSpace’, which thrive on new business models of low cost access to space by capitalising on the advancements made in recent years in small satellite technology, consumer electronics, and computing power. Tiny modular satellites called ‘CubeSats’, weighing 1-4 kgs and costing under $100,000 have revolutionised the way space products and services are delivered to end users. The movement began in Europe and US simultaneously as a by-product of university and space agency collaborated research, but it was the US which took the lead in successfully commercialising these technologies developed in laboratories. Figure 3 shows the forecast of nano satellites weighing between 1-50 kg, which are scheduled to be launched during 2014-16 globally.6The high number arises from the fact that such nano satellites have short development timelines, and provide the necessary agility for satellite operators to develop large constellations that can cater to a larger customer base with high service quality. These NewSpace companies have ushered in widespread changes in the traditional satellite manufacturing and launch services industry, with companies like RocketLabs and Firefly Systems building new launchers cheaply using innovative techniques like additive manufacturing, to reduce the cost to orbit for these satellites. The impact of these companies has been felt within the space industry, as practices from these ‘NewSpace’companies have been adopted to keep the costs low and have a factory type approach in building systems in order to cater to the increasing demand. The NewSpace revolution has now led to companies such as Google, Virgin, and Qualcomm investing in small satellite-based communication technologies. India, however, has remained shielded from the rapid changes that have happened in the global space industry over the past decade. **ISRO** has been **slow to respond on** both **commercial** and academic **fronts,** with only a handful of university-level small satellite missions being launched during the same period, none of which could transform into a full-fledged commercial opportunity for the people involved in these projects. Lack of clarity on space policy in India is to blame, and partly the lack of willingness of DoS to take up additional responsibility of creating an ecosystem that disrupts their own traditional one, without any visible incentives. In the following sections, the need and motivation to develop a strong private industry ecosystem is detailed with necessary arguments. 1.2 Motivations to Develop a Private Industry Ecosystem in India Presently, **India has inherent advantages** over other countries **due** the availability of **skilled workforce**, a stable and business friendly **government,** positive investor climate and low cost of operations**.** Because India was an early mover in space technology, it is **poised to become a major space power albeit** slight policy push towards **greater commercialisation** of the industry. Table 1 shows the PESTLE analysis of India, in lieu of the motivation to develop a strong private space industry. The PESTLE analysis shows high suitability for services-based business models to operate out of India. The government’s encouragement for private space industry within the country to develop capacity and capability in pursuing space activities should thereby be directed to both the spectrums across the industry value chain. A focused space policy mandate can have multiple direct and fringe benefits to the government, especially in the defence sector which has been the current government’s area of interest through its ‘Make in India’ initiative. Some of the direct and indirect benefits of space technology include: Civilian and Commercial **Space industry has the potential to emerge as the third** technological **success** front following the successes of the Information Technology (IT) and Biotechnology in the country. Space **has an important role in** the overall **economic development** of the country **and** in the success of the government initiatives such as Digital India and Make in India. The development of the private space industry shall **aid in rural connectivity, e-governance and** setting up of **manufacturing facilities** base for products of high technology in India, creating headways in the overall emergence of the country at the world stage. The success of the space industry will enhance capacities within the country and complement the government-driven programme, which has been historically proven in advanced space faring countries such as the US. Capacity building in the private industry at a turnkey level for both upstream and downstream shall assist theeconomic development of the country by keeping up to the pace of requirement of the marketplace (e.g. Direct-to-Home TV, Broadband Internet), while reducing the inherent dependence on foreign assets. For example, as per a recent Comptroller and Auditor General (CAG) report, only one among the seven DTH providers is leasing transponder from the INSAT system**. The** primary **reason for this disparity is** the **slow pace** at which **ISRO has added** satellite transponders **to the commercial market.** The net effect is that the DTH providers are incurring higher transponder costs on foreign satellites when INSAT could have been an equally reliable, and more cost efficient, alternative. Space has its bearings over the imagination of youth and a strong emerging local industry can revolutionise the mindset of the national talent pool and can potentially aid in reversal of brain drain from the country. Public outreach, awareness, and STEM education are some of the intangible impact that investment in space technology produces. The capacity built up within the industry shall foster Business-to-Business (B2B) collaborations within the country and with enterprises across the globe and create also a strong focus on Business-to-Customer (B2C) applications which moves from the traditional Government-to-Government (G2G) flow of development of capacity and application of technology. The B2B, B2C ecosystem in the space industry has immense potential of tapping the much successful IT infrastructure of the country and extending the IT knowledge base to core software based applications of spacebased information such as Geographical Information Systems (GIS).It shall create an environment of technological innovation which when supported and encouraged can sustain to create a secondary source of development of high-tech hardware, software and applications for the government. An ecosystem of technological innovation in space technology has the potential of creating the next generation Small and Medium Scale Enterprises (SMEs) in India which shall 17 leverage the frugal nature of engineering and can create products and services independently for local and global requirements. Military **In the development of space technology with several dual use capabilities, there exists a case for the building up a sustained indigenous industry ecosystem that shall support the safety and security apparatus of the country**. These range **from development of capabilities in upstream** such as satellite, launch vehicle development **to** creating specific downstream applicationssuch as Automatic Identification of Ships (AIS), Electronic Intelligence (ELINIT), Communication Intelligence (COMMINT) and other Command, Control, Communications, Computers, Intelligence, Information, Surveillance, and Reconnaissance (C4I2SR) applications. Space Situational Awareness (SSA) is **the ability to view, understand and predict the physical location of natural and man-made objects orbiting the Earth. SSA is a prominent concern for both military and commercial systems, mainly because of the increasing military reliance on space assets**. The debris created by the anti-satellite testing by China in 2007 and the Kosmos-Iridium collision in 2009 has raised additional concerns about the safety of space assets. India currently relies on NASA’s data, and will operationalise its own system of Multi Object Tracking Radar (MOTR) by 2017.7 Meanwhile in the US, commercial operators have established the Space Data Association (SDA) for providing satellite operators reliable and efficient data for increased safety of satellite operations; this is in addition to the Department of Defense’s (DoD) own surveillance network. **The changing space security environment and the rising international concerns over the rapid growth of military assets in space makes space security one of the most important issues to address.** The need to have a space security policy is being 7 increasingly debated in India **and** the IDSA Task force in 2009 produced a report which attempted to conceptualise such a policy. However, there is reluctance to talk about use of space for national security needs including its military applications. Though efforts are being made to synchronize the activities of ISRO which is responsible for India’s civilian space programme and the Defence Research and Development Organisation (DRDO) which works on the use of space for national security needs, **the lack of a strong private industry that can meet heightened needs for such sophisticated missions hampers the progress in this direction,** apart from the bureaucratic delay that is normally associated when two high security government agencies interact. Capacity building within the space industry shall not only drive commercial applications, but shall aid the government in situations of emergencies (e.g. natural disasters, intelligence gathering for fighting against terrorism) and can eventually develop into a foundation that could potentially contribute as a part of a strong foreign policy drive. Studying the impact of space technology on civilian life is a complicated task, especially when it comes to quantifying the tangible and intangible impact. **The spill-over of space technology is in sectors as varied as defence, agriculture and education.** There exist many ways to show the impact of investment in space technology; some of them illustrated above. **Thus, the technological and knowledge backbone for space technology creates opportunities in the marketplace to create and explore commercial applications on a global scale, which** traditionally might not be the fundamental focus a governmental space agency, as well as **create multiple intangible impacts** across various sectors such as defence, education, agriculture, energy, transportation and environment**.** India has made substantial investment in its government space programme over the years, but it is **a sustained policy push towards investments in the private space industry ecosystem that will create commercial space applications**, complementing the societal benefits motivation currently being pursued by the government.

#### Indian space military heg checks and limits Chinese heg in the Indo-Pacific.

**Bommakanti 7-15-20**[Kartik Bommakanti is a Fellow with the Strategic Studies Programme. Kartik specialises in space military issues and his research is primarily centred on the Indo-Pacific region. He also works on emerging technologies as well as nuclear, conventional and sub-conventional coercion, particularly in the context of the Indian subcontinent and the role of great powers in the subcontinent’s strategic dynamics. He has published in peer reviewed journals., The enduring significance of space weapons for India, 7-15-2020,ORF,https://www.orfonline.org/expert-speak/the-enduring-significance-of-space-weapons-for-india/, 12-8-2021 amrita]

Regardless of the Americans protestations about the Russian test**, there are important underlying implications for India particularly in the context of Chinas’ growing space and counterspace capabilities as well as the repercussions that are likely to ensue if New Delhi were to pursue a weak response to Chinese space military power.** India will need a whole set of additional KEW tests. This author made the case for sea-launched and air launched KEWs in an extensive analysis. However, it was focused mostly on earth to space KEW systems and Directed Energy Weapons (DEWs). Confining India to the acquisition of KEWS and Directed Energy Weapons (DEWs) or cyber and electronic weapons can be expanded to include co-orbital KEWs. The Russian test also illustrates why co-orbital KEWs are also critical. Investment in additional KEW capabilities assumes considerable importance especially for India because of the long-term defence related challenges presented by the People’s Republic of China (PRC). **The ongoing boundary crisis should only lend greater urgency to India’s space weapons programme, simply because space assets in India’s inventory are vital to the prosecution of a potential military campaign whether on land, sea or air against the People’s Republic China (PRC).** The PRC is known to have developed the accoutrements necessary to conduct co-orbital test. For instance, in 2008 the Chinese BX-1 microsatellite while orbiting in close proximity to its mother satellite, executed a maneuver within 45 kilometers of the International Space Station (ISS). While BX-1 did not definitively establish a PRC co-orbital ASAT capability, it did indicate the PRC’s latent capability to conduct co-orbital kinetic tests and mount attacks against a potential adversary’ space assets. India must avoid what one leading Indian space analyst prior to India’s March 2019 KEW test observed: “To date, India’s interests in space have been restricted to using space assets for reconnaissance, navigation and communication. However, China’s ASAT test could influence India’s policies in the field of counter-space capabilities. To address the concerns raised at the regional and global level about this Chinese bravado, the best option for India could be to follow the disarmament and arms control route.” The statement is a non-sequitur, **while India has conducted only but one direct ascent KEW test, it has not matched China** in developing and executing non-destructive earth to space KEW tests, let alone fully match Chinese KEW, DEW, electronic and cyber weapon capabilities to target space assets. **Pursuing the arms control and disarmament route by India will be premature** in response to the PRC’s extensive development of space **and** counterspace capabilities**.** Reinforcing this point is that the PRC’s current and evolving space weapons programme deserve a sustained response. Bringing closure to the development of space and counterspace capabilities **would imply surrender that is completely unwarranted in light of Beijing’s recent and ongoing aggressiveness,** which India is evidently bearing the brunt. Very likely Beijing will be emboldened even more in deducing that India’s skittish response to its space weapons programme should be treated as weakness **and India subjected to further aggression, not just terrestrially, but equally in space.** The External Affairs Minister S. Jaishankar stated there is an imperative for India and China to achieve some “equilibrium”, although he never fully elaborated what exactly it would look like. However, if equilibrium or more precisely a stable balance of power is to be achieved in the Indo-Pacific, military power is crucial. **Space military power has grown in importance** from reconnaissance, navigation and communications to space weapons **and will be crucial to generating an equilibrium.**

Ignoring the eventual deployment of weapons in space would be foolhardy for a state such as India when pitted against the PRC**. Consequently, space military power is a key constituent element in India’s capacity to contribute to the Asian balance of power**. Thus, **investing in a direct ascent and co-orbital KEWs as well as DEWS and cyber and electronic weapons geared for destroying or disabling spacecraft is crucial**. If India were to deprive itself of offensive space weapons to take Chinese or other enemy spacecraft, New Delhi would be putting itself at a considerable disadvantage by leaving it at the mercy of a wide variety of Chinese counterspace capabilities and measures against its Imagery Intelligence (IMINT), Communications (COMMINT), Electronic Intelligence (ELINT) and Synthetic Aperture Radar (SAR) satellites. Indeed, it is perplexing to see arguments that call for India to restrain itself, strive for disarmament and arms control when China makes no significant effort to do so beyond rhetorical commitments. The Russian co-orbital test has underlined the importance of space borne weapons despite entreaties for the non-weaponisation of space. The Modi government must see the emerging space military competition as an opportunity to bolster India’s counterspace capabilities. **It will help cement India as a major space military power and prevent Chinese hegemony over the Indo-Pacific.** Chinese hegemony on the other hand will become a certainty, if New Delhi lapses into self-doubt and remains unduly restrained in the testing, integration and deployment of space weapons.

#### China heg is revisionist and offensive-- in the Indo-Pacific that causes draw-in.

**Brands 19** [Hal Brands is the Henry A. Kissinger Distinguished Professor of Global Affairs at the Johns Hopkins School of Advanced International Studies, a senior fellow at the Center for Strategic and Budgetary Assessments. Zack Cooper is a research fellow at the American Enterprise Institute, an associate at Armitage International, and an adjunct assistant professor at Georgetown University, "After the Responsible Stakeholder, What? Debating America’s China Strategy." Texas National Security Review. Volume 2, Issue 2. February 2019k <https://tnsr.org/2019/02/after-the-responsible-stakeholder-what-debating-americas-china-strategy-2/> 12-10-2021 amrita]

The responsible-stakeholder paradigm offered a coherent “theory of victory”: It identified a desired outcome and employed all elements of American power to bring about that outcome. Over time, the strategy produced greater Sino-American cooperation on a range of issues, from counter-piracy to climate change. **It is increasingly clear, however, that the responsible-stakeholder strategy failed. Two of its core assumptions now appear misplaced: the idea that China’s intentions would become more benign over time, and the belief that Washington had the power to keep Chinese ambitions in check until that shift occurred.** What happened instead was that, as China rose, the Chinese Communist Party became more willing to use its newfound power in coercive and disruptive ways.3 Confounding Western hopes that China would liberalize, **the Chinese Communist Party embraced more repressive policies**, especially after Xi Jinping became general secretary in 2012. **Meanwhile, Beijing sought to control the Indo-Pacific region by** coercing its neighbors, undermining U.S. alliances, practicing mercantilist policies, steadily **increasing its presence** and influence in the South China Sea**, and modernizing its military. In the Indo-Pacific and beyond, moreover, China has engaged in a range of behaviors that challenge American interests: supporting authoritarian regimes, engaging in widespread corruption, pursuing predatory trade practices and major geo-economic projects meant to project Chinese influence further afield,** seeking to stifle international criticism of its human rights abuses, practicing massive intellectual property theft, and striving for technological dominance in critical emerging fields such as artificial intelligence.Recently, China’s confidence has been on display, with Xi stating in 2018 that “no one is in a position to dictate to the Chinese people,” after declaring in 2017 that China is ready to “take center stage in the world.”4 Rather than becoming a responsible stakeholder in a U.S.-led system, **China appears increasingly determined to compete with Washington for primacy in the Indo-Pacific and beyond.** These more assertive policies have been made possible by China’s surprisingly rapid growth**.** Between 1990 and 2016, China’s constant-dollar gross domestic product increased roughly twelve-fold and its military spending grew tenfold.5 The People’s Liberation Army rapidly developed the tools — anti-ship missiles, quiet submarines, advanced fighter aircraft, and integrated air defenses — needed to contest American supremacy in the Western Pacific and give China greater ability to shape events in its region and beyond. Surging national wealth also led to an explosion of Chinese trade, lending, and investment abroad, which enabled far more ambitious geo-economic statecraft**.** All told, **this expansion of Chinese national power is unprecedented in modern history.** It has dramatically narrowed the gap between China and the United States and made it far more difficult for Washington to shape Beijing’s behavior. No strategy can survive the invalidation of its central premises: By the end of the Obama presidency, the responsible-stakeholder concept was living on borrowed time. The Trump administration drove the final stake through the concept in its 2017 National Security Strategy. The document slammed Beijing for attempting to “shape a world antithetical to U.S. values and interests” and declared the failure of China’s “integration into the post-war international order.”6 In particular, **China’s behavior increasingly threatens three enduring U.S. interests. First, the United States seeks to maintain a favorable balance of power in the Indo-Pacific region** and to deter a military conflict — over Taiwan, Korea, or maritime Asia — that could undermine the regional order and cost American or allied lives. Second, **U.S. leaders have an interest in ensuring an open international economy conducive to American prosperity and competitiveness.** Third, **the United States seeks to preserve an international environment in which democracy, human rights, and the rule of law can** flourish, and it seeks to **strengthen** — where possible — the prevalence of those practices abroad. As Chinese power has grown and Chinese behavior has become more assertive, U.S. policymakers have come to see all three of these interests as being imperiled.

#### That goes nuclear-- extinction :/

**Hayes 18** [Peter John Hayes is the Executive Director of the Nautilus Institute for Security and Sustainability, a non-governmental policy-oriented research and advocacy group. He graduated from the University of Melbourne with a degree in History, and from University of California, Berkeley with a Ph.D. in energy and resources. #gobears, Trump and the Interregnum of American Nuclear Hegemony, November 8, 2018. [https://www.tandfonline.com/doi/full/10.1080/25751654.2018.1532525 recut 12-10-2021](https://www.tandfonline.com/doi/full/10.1080/25751654.2018.1532525%20recut%2012-10-2021) amrita]

During a post-hegemonic era, long-standing **nuclear alliances are** likely to be **replaced by** ad hoc nuclear **coalitions**, aligning and realigning around different congeries of threat and even actual nuclear wars, **with** much **higher levels of** uncertainty and **unpredictability** than was the case in the nuclear hegemonic system. There are a number of ways that this dynamic could play out during the interregnum, and these dynamics are likely to be inconsistent and contradictory. In some instances, the sheer momentum of past policy combined with bureaucratic inertia and the potency of political, military service and corporate interests, may ensure that residual aspects of the formerly hegemonic postures are adhered to even as formal nuclear alliances rupture. Even as they reach for the old anchors, these **states may be forced to adjust** and retrench **strategically, or start** to take their own nuclear risks by **making** increasingly explicit **nuclear threats** and deployments **against nuclear-armed adversaries** – as Japan has begun to do with reference to its “technological deterrent” since about 2012.9 This period could last for many years until and **when** nuclear **war breaks out** and leads to a post-nuclear war disorder; or **a** new, post-hegemonic strategic **framework is established** to manage and/or abolish nuclear threat. Under full-blown American nuclear hegemony, fewer states had nuclear weapons, the major nuclear weapons states entered into legally binding restraints on force levels and they learned from nuclear near-misses to promulgate rules of the road and tacit understandings. The lines drawn during full-blown collisions involving nuclear weapons were stark and concentrated the minds of leaders greatly. In a nuclear duel, it was clear that only one of two sides could fire first; the only question was which one. **Now, with nine** nuclear weapons **states, and conflicts** conceivably **involving** three, four or **more of them**, no matter how much leaders concentrate, **it will not be evident** who is aiming at who, **who may fire** first, and during a volley, who fired first and even who hit whom. In a highly proliferated world, **nuclear-armed states** may **feel driven to obtain larger** nuclear **forces** able **to deter multiple adversaries** at the same time, sufficient to conduct not only a few nuclear attacks but **configured to fight more than one** protracted **nuclear war at a time, especially in** nuclear **states torn apart by civil war** and post-nuclear attack reconstruction

## Case

### Cosmic Colonialism

#### Interp- debaters may not misrepresent their evidence in tags, commonly known as power tagging’

#### Violation- THEIR IMPACT EVIDENCE IS ABOUT SUN BURNS, IT SAYS THAT WEARING MORE OR LESS CLOTHES HAS A LARGER EFFECT ON UV RADIATION THAN OZONE DEPLETION, and definitely does not make the claim of extinction that they tagged it as.

**Their author Lucas et al 14** (R. M. Lucas (National Centre for Epidemiology and Population Health, The Australian National University, Canberra 2601, Australia, Telethon Kids Institute, University of Western Australia, Perth 6008, Australia), M. Norval (Biomedical Sciences, University of Edinburgh Medical School, Edinburgh EH8 9AG, Scotland, UK), R. E. Neale (QIMR Berghofer Medical Research Institute, Brisbane 4029, Australia), A. R. Young (King's College London (KCL), St John's Institute of Dermatology, London SE1 9RT, UK), F. R. de Gruijl (Department of Dermatology, Leiden University Medical Centre, P.O. Box 9600, NL-2300 RC Leiden, The Netherlands), Y. (Akita University Graduate School of Medicine, Akita-shi, Akita Prefecture, Japan, National Institute for Minamata Diseases, Minamata-sh, Kumamoto Prefecture, Japan) and J. C. van der Leun (iEcofys, Kanaalweg 16G, NL-3526 KL Utrecht, The Netherlands), “The consequences for human health of stratospheric ozone depletion in association with other environmental factors”, November 10th, 2014, <https://pubs.rsc.org/en/content/articlehtml/2015/pp/c4pp90033b>) DD | JH

Due to the implementation of the Montreal Protocol, which has limited, and is now probably reversing, the depletion of the stratospheric ozone layer, only modest increases in solar UV-B radiation at the surface of the Earth have occurred. For many fair-skinned populations, changing behaviour with regard to exposure to the sun over the past half century – more time in the sun, less clothing cover (more skin exposed), and preference for a tan – has probably contributed more to greater levels of exposure to UV-B radiation than ozone depletion. Exposure to UV-B radiation has both adverse and beneficial effects on human health. This report focuses on an assessment of the evidence regarding these outcomes that has been published since our previous report in 2010. The skin and eyes are the organs exposed to solar UV radiation. Excessive solar irradiation causes skin cancer, including cutaneous malignant melanoma and the non-melanoma skin cancers, basal cell carcinoma and squamous cell carcinoma, and contributes to the development of other rare skin cancers such as Merkel cell carcinoma. Although the incidence of melanoma continues to increase in many countries, in some locations, primarily those with strong sun protection programmes, incidence has stabilised or decreased over the past 5 years, particularly in younger age-groups. However, the incidence of non-melanoma skin cancers is still increasing in most locations. Exposure of the skin to the sun also induces systemic immune suppression that may have adverse effects on health, such as through the reactivation of latent viral infections, but also beneficial effects through suppression of autoimmune reactivity. Solar UV-B radiation damages the eyes, causing cataracts and pterygium. UV-B irradiation of the skin is the main source of vitamin D in many geographic locations. Vitamin D plays a critical role in the maintenance of calcium homeostasis in the body; severe deficiency causes the bone diseases, rickets in children and osteomalacia in adults. Although many studies have implicated vitamin D deficiency in a wide range of diseases, such as cancer and cardiovascular disease, more recent evidence is less compelling, with meta-analyses of supplementation trials failing to show a beneficial effect on the health outcomes that have been tested. It continues to be difficult to provide public health messages to guide safe exposure to the sun that are accurate, simple, and can be used by people with different skin types, in different locations, and for different times of the year or day. There is increasing interest in relating sun protection messages to the UV Index. Current sun protection strategies are outlined and assessed. Climatic factors affect the amount of UV radiation received by the skin and eyes, separately from the effect of ozone depletion. For example, cloud cover can decrease or increase the intensity of UV radiation at Earth's surface and warmer temperatures and changes in precipitation patterns may alter the amount of time people spend outdoors and their choice of clothing. The combination of changes in climate and UV radiation may affect the number of pathogenic microorganisms in surface waters, and could have an impact on food security through effects on plant and aquatic systems. It remains difficult to quantify these effects and their possible importance for human health.

#### Standards

#### Academic integrity- Debaters don’t have the time to go over every card to determine if it is cut correctly, the burden is on them to not blatantly mis-represent their evidence, They open the floodgates to labeling any card that describes adverse effects as extinction

#### Fairness- Their misrepresentation of evidence makes it unfair to debate because, it wildly overstates their claims and is blatantly not what their author are discussing.

**Fairness is a voter – its constitutive of any competitive activity based on skills, wins, and losses – unfair practices skew the judge’s ability to determine the better debater**

**Drop the debater to set a norm – if you lose they will definitely go fix this card and be more persuaded to do better research in the future**

**Competing interps – reasonability is arbitrary and begs the question of what’s reasonable requiring judge intervention**

### US-Russia

#### 1] Their ev isolates two alt causes – that’s an immediate TKO – they conveniently cut out the two following paragraphs from the article that prove our point– we read blue

1AC CSIS 18 [(Center for Strategic and International Studies), “Why Human Space Exploration Matters,” August 21, 2018 https://www.csis.org/blogs/post-soviet-post/space-cooperation] TDI

U.S.-Russian space cooperation continues to be a stated mutual goal. In April 2018, President Putin said of space, “Thank God, this field of activity is not being influenced by problems in politics. Therefore, I hope that everything will develop, since it is in the interests of everyone…This is a sphere that unites people. I hope it will continue to be this way.” During his statement at a recent event at CSIS, NASA Administrator Jim Bridenstine said, “[space] is our best opportunity to dialogue when everything else falls apart. We’ve got American astronauts and Russian cosmonauts dependent on each other on the International Space Station, which enables us to ultimately maintain that dialogue.” The U.S. and Russia both benefit from the ISS partnership. Russia provides transportation to the ISS for U.S. astronauts, from which Russia receives an average of $81 million per seat on the Soyuz (and recognition of its status as a space power). The U.S. also benefits from Russia’s technical contributions to the ISS while Russia benefits The U.S. and Russia signed a joint statement in 2017 in support of the idea of collaborating on deep space exploration, including the construction of the Lunar Orbital Platform-Gateway, a research-focused space station orbiting the moon. Through agreements on civilian space exploration, such as the Lunar Orbital Platform-Gateway or future Mars projects, that have clear benefits to both sides, some degree of cooperation will remain in both countries’ interest. The high price tag for pursuing space exploration alone and opportunities for sharing and receiving technical expertise encourages international partnerships like the ISS.

However, at least three factors, apart from the overall deterioration of U.S.-Russia relations, threaten this cooperation. First, growth of the private sector space industry may alter the economic arrangement between the U.S. and Russia, and ultimately lower the benefits of cooperation to both countries. The development of advanced technologies by private companies will give NASA new options to choose from and reduce the need to depend on (and negotiate with) Russia. If NASA and its Russian counterpart, Roskosmos, have no need to talk with one another, they probably won’t in the face of tense political relations. The U.S. intends to use Boeing and SpaceX capsules for human spaceflight beginning in 2020, and a Congressional plan in 2016 set a phase out date of Russian RD-180 rocket engines by 2022. [ORANGE LUTHERAN CARD ENDS]

Second, the seeming emergence of space as a new domain of warfare in U.S. and Russian national security and defense doctrine could make cooperation with a potential adversary too risky. The 2018 National Defense Strategy characterizes “space and cyberspace as warfighting domains.” Russia’s 2010 military doctrine stated that ensuring superiority in space is “decisive factor” in achieving its strategic goals. The 1967 Outer Space Treaty that spacefaring countries signed prohibits the installation and use of weapons of mass destruction in space but does not expressly prohibit conventional weapons or discuss the destruction of satellites. As more and more critical infrastructure and lives rely on the internet, countries are becoming increasingly concerned about the security of satellites. One country’s attempts to protect their space assets with space-based weapons may spook others into building up their own capabilities in a high-tech example of the classic security dilemma. This would increase the tense security environment, impeding incentives for technology or capability sharing in space partnerships.

Third, existing cooperation, especially over the ISS, is winding down, leaving the United States and Russia to face the choice of renewing cooperation in other areas of space exploration at a time of growing hostility, or of partnering with other actors. Russian Embassy Press Secretary Nikolay Lakhonin said, “[Lunar Orbital Platform-Getaway] will become a logical continuation of the International Space Station as a platform for productive cooperation and partnership based on equality of its members, mutual trust and respect”. However, if relations worsen dramatically, Russia could turn to China for space partnerships. In 2018 Roskosmos and the China National Space Administration signed a memorandum of understanding on a joint venture to explore the Moon, even though NASA and Roskosmos support collaboration on the Lunar Orbital Platform-Gateway. Major Sino-Russian cooperation would likely further diminish US-Russian cooperation in space due to U.S. concerns over Chinese cyber espionage and technology capture (a clause in a 2011 spending bill passed by Congress prohibits NASA from cooperating on joint ventures with China). Because the U.S. is still a better-equipped partner for future space projects, Russia may keep to the existing framework. On the other hand, owing to increasing concern over Russia’s military and cyber activities, the U.S. may be the one to look elsewhere.

### Mining

#### 2] **Military space satelties have already been broken up by space debris – their escalation scenario is absurd**

Wall 21’ Home News Spaceflight Space collision: Chinese satellite got whacked by hunk of Russian rocket in March By Mike Wall published August 17, 2021 We may see more and more of these orbital smashups in the coming years. //RD Debatedrills

Yunhai 1-02's wounds are not self-inflicted. In March, the U.S. Space Force's 18th Space Control Squadron (18SPCS) reported the breakup of Yunhai 1-02, a Chinese military satellite that launched in September 2019. It was unclear at the time whether the spacecraft had suffered some sort of failure — an explosion in its propulsion system, perhaps — or if it had collided with something in orbit. We now know that the latter explanation is correct, thanks to some sleuthing by astrophysicist and satellite tracker Jonathan McDowell, who's based at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts. Sponsored Links Cupertino: Startup Is Changing the Way People Retire SmartAsset Related: The worst space debris events of all time Click here for more Space.com videos... CLOSE On Saturday (Aug. 14), McDowell spotted an update in the Space-Track.org catalog, which the 18SPCS makes available to registered users. The update included "a note for object 48078, 1996-051Q: 'Collided with satellite.' This is a new kind of comment entry — haven't seen such a comment for any other satellites before," McDowell tweeted on Saturday. He dove into the tracking data to learn more. McDowell found that Object 48078 is a small piece of space junk — likely a piece of debris between 4 inches and 20 inches wide (10 to 50 centimeters) — from the Zenit-2 rocket that launched Russia's Tselina-2 spy satellite in September 1996. Eight pieces of debris originating from that rocket have been tracked over the years, he said, but Object 48078 has just a single set of orbital data, which was collected in March of this year. "I conclude that they probably only spotted it in the data after it collided with something, and that's why there's only one set of orbital data. So the collision probably happened shortly after the epoch of the orbit. What did it hit?" McDowell wrote in another Saturday tweet. Yunhai 1-02, which broke up on March 18, was "the obvious candidate," he added — and the data showed that it was indeed the victim. Yunhai 1-02 and Object 48078 passed within 0.6 miles (1 kilometer) of each other — within the margin of error of the tracking system — at 3:41 a.m. EDT (0741 GMT) on March 18, "exactly when 18SPCS reports Yunhai broke up," McDowell wrote in another tweet. Thirty-seven debris objects spawned by the smashup have been detected to date, and there are likely others that remain untracked, he added. Despite the damage, Yunhai 1-02 apparently survived the violent encounter, which occurred at an altitude of 485 miles (780 kilometers). Amateur radio trackers have continued to detect signals from the satellite, McDowell said, though it's unclear if Yunhai 1-02 can still do the job it was built to perform (whatever that may be). Space Junk Clean Up: 7 Wild Ways to Destroy Orbital Debris Click here for more Space.com videos... McDowell described the incident as the first major confirmed orbital collision since February 2009, when the defunct Russian military spacecraft Kosmos-2251 slammed into Iridium 33, an operational communications satellite. That smashup generated a whopping 1,800 pieces of trackable debris by the following October. However, we may be entering an era of increasingly frequent space collisions — especially smashups like the Yunhai incident, in which a relatively small piece of debris wounds but doesn't kill a satellite. Humanity keeps launching more and more spacecraft, after all, at an ever-increasing pace. "Collisions are proportional to the square of the number of things in orbit," McDowell told Space.com. "That is to say, if you have 10 times as many satellites, you're going to get 100 times as many collisions. So, as the traffic density goes up, collisions are going to go from being a minor constituent of the space junk problem to being the major constituent. That's just math." We may reach that point in just a few years, he added. The nightmare scenario that satellite operators and exploration advocates want to avoid is the Kessler syndrome — a cascading series of collisions that could clutter Earth orbit with so much debris that our use of, and travel through, the final frontier is significantly hampered. RELATED STORIES — Who's going to fix the space junk problem? — Space junk removal is not going smoothly — The world needs space junk standards, G7 nations agree Our current space junk problem is not that severe, but the Yunhai event could be a warning sign of sorts. It's possible, McDowell said, that Object 48078 was knocked off the Zenit-2 rocket by a collision, so the March smashup may be part of a cascade. "That's all very worrying and is an additional reason why you want to remove these big objects from orbit,"

#### 4] Partnerships between governments and private industry solves debris and only getting better --- major strides by 2024

**Pultarova 21**

[Tereza Pultarova, 05-26-2021, "Commercial space clean-up service could be ready in 2024," Space, ereza is a London-based science and technology journalist, aspiring fiction writer and amateur gymnast. Originally from Prague, the Czech Republic, she spent the first seven years of her career working as a reporter, script-writer and presenter for various TV programmes of the Czech Public Service Television. She later took a career break to pursue further education and added a Master's in Science from the International Space University, France, to her Bachelor's in Journalism and Master's in Cultural Anthropology from Prague's Charles University. She worked as a reporter at the Engineering and Technology magazine, freelanced for a range of publications including Live Science, Space.com, Professional Engineering, Via Satellite and Space News and served as a maternity cover science editor at the European Space Agency. [https://www.space.com/commercial-space-debris-removal-2024-astroscale]//DebateDrillsWW](https://www.space.com/commercial-space-debris-removal-2024-astroscale%5d//DebateDrillsWW)

"This **partnership with OneWeb** demonstrates their commitment to space sustainability and is the next step towards maturing our technologies **to develop** a full-service **debris removal** offering **by 2024**," John Auburn, managing director of Astroscale U.K. and group chief commercial officer [said in a statement](https://astroscale.com/astroscale-uk-signs-2-5-million-agreement-to-develop-space-debris-removal-technology-innovations-with-oneweb/). The new service **targets constellation operators** and is called ELSA-M. **The program would enable the removal of** multiple **retired satellites in** a **single mission**, thus **reducing cost** for the client, the company said in the statement. **The** orbital junk **collector would push each satellite into the atmosphere to burn up**, then return for the next defunct piece. "This funding **will help us evolve** key rendezvous and proximity operations technologies and capabilities beyond ELSA-d towards an end-of-life servicing offering for a range of constellation customers," Jason Forshaw, Astroscale's head of future business, Europe, said in the statement. "In parallel to this project, we're developing our next generation docking plate (DP), which is fitted to clients before launch, and is designed to enable a servicer to grapple the client. We are encouraging constellation customers to fit DPs to future-proof their satellites in case of need for removal due to failure, or at end of life, or to provide future in-orbit servicing." Astroscale's ELSA-d demonstration mission, currently in low Earth orbit, will carry out a series of rendezvous and close proximity debris capture and release manoeuvres this summer. The results of the test campaign will inform further work on the ELSA-M program, Astroscale said. The funding is part of the European Space Agency's (ESA) program called Sunrise, developing [flexible reprogrammable communication satellites.](https://www.gov.uk/government/news/uk-companies-join-forces-to-build-revolutionary-beam-hopping-satellite)